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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/857,585	05/16/1997	FUMIO ABE	WATK:040E	4360

7590

07/22/2003

PARKHURST WENDEL & BURR  
SUITE 210  
1421 PRINCE STREET  
ALEXANDRIA, VA 22314

EXAMINER
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NORTON, NADINE GEORGIANNA

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 07/22/2003

67

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

08/857,585

Applicant(s)

ABE ET AL.

Examiner

Nadine Norton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 3,5,6,12,14-16 and 18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3, 5, 6, 12, 14-16, 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 3, 5, 6, 12, 14, 15, 16 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over the translation of Hei 2-56247 in view of Eberly, Jr. et al.(3,591,488) and Swaroop et al.(5,447,694).

In the pending application, applicants claim a composition comprising a high silica zeolite having a Si/Al ratio of not less than 40, and a heat resistant oxide, wherein the heat resistant oxide is loaded with a noble metal. Applicants further claim an adsorbent comprising a honeycomb structure coated with a heat resistant oxide loaded with a noble metal.

The translation of Hei 2-56247 teaches a composition for automobile exhaust gas treatment comprising a zeolite and a heat resistant oxide in the form of alumina. The Hei 2-56247 translation also discloses that a noble metal in the form of Pt is loaded on alumina. For example, see page 3, lines 7-13. The translation of Hei 2-56247 also discloses that the support is

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honeycomb shaped. In addition, the support is coated with a heat resistant oxide in the form of alumina. For example, see page 3, lines 6-7.

The translation succeeds in teaching applicants' claimed zeolite component and heat resistant oxide component, other than zeolite, loaded with a noble metal in the form of alumina loaded with Pt. Furthermore, Hei 2-56247 also succeeds in teaching applicants' honeycomb shaped support. In addition, the translation of Hei 2-56247 is considered to encompass applicants' alkali metal content of 0.1% by weight or less because "less" is considered to encompass 0%.

Several differences are noted between the applied art of the Hei 2-56247 translation and applicants' claimed invention. The Hei 2-56247 translation is silent about the Si/Al ratio in the zeolite. Furthermore, the Hei 2-56247 translation is silent about the specific structure of the honeycomb. In addition, the modified teachings of Hei 2-56247 absorbent structure not being poisoned by the water in the exhaust. The reference is silent about the BET specific surface area of the zeolite.

The reference of Eberly, Jr. et al.(3,591,488) is cited for the general teaching that it is known in the art that zeolites with that high silica/alumina ratios, such as 50, are desirable for high temperature conversions because they display increased thermal stability. For example, see column 2, lines 41-45 and column 5, lines 2-5.

The reference of Swaroop et al.(5,447,694) is cited to illustrates that zeolites with specific BET surface areas within applicants' claimed range are suitable for use in exhaust gas treatment. See abstract, column 5, lines 20-30 and Fig 1.

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Since it is desirable for compositions to be thermally stable for exhaust gas treatment process due to the high temperatures involved, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select a zeolite with a high silica/alumina ratio in the exhaust gas composition disclosed by the translation of Hei 2-56247 because it is known in the art that zeolites with a high silica/alumina ratio display increased thermal stability.

Furthermore, applicants' limitations directed at the specific shape of the honeycomb composition are not considered to be patentable distinctions because such shapes are conventional in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made that the catalyst produced by the modified teachings of Hei 2-56247 would possess similar resistance to water poisoning because it contains similar components to applicants' claimed composition. Similar compositions are considered to have similar physical properties.

In addition, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ any proportion of components in the modified composition of Hei 2-56247, including the specific proportions of (a) and (b) claimed by applicants, because there is no invention where the difference in proportions is not critical and was ascertained by routine experimentation since the determination of workable ranges is not considered to be inventive. In re Swain and Adams, 70 USPQ 412 (CCPA 1946).

Since the modified teachings of the translation of Hei 2-56247 do not limit the surface area of the zeolite, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a zeolite with a BET in the range disclosed by Swaroop et

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al.(5,447,694), because the reference of Swaroop et al.(5,447,694) illustrates that such BET surface areas are effective for exhaust gas treatment.

***Claim Rejections - 35 USC § 103***

Claims 3, 5, 6, 12, 14, 15, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the translation of Hei 2-56247 in view of Inoue et al.(5,223,236) and Swaroop et al.(5,447,694).

In the pending application, applicants claim a composition comprising a high silica zeolite having a Si/Al ratio of not less than 40, and a heat resistant oxide, wherein the heat resistant oxide is loaded with a noble metal. Applicants further claim an adsorbent comprising a honeycomb structure coated with a heat resistant oxide loaded with a noble metal.

The translation of Hei 2-56247 teaches a composition for automobile exhaust gas treatment comprising a zeolite and a heat resistant oxide in the form of alumina. The abstract also discloses that a noble metal in the form of Pt is loaded on alumina. For example, see page 3, lines 7-13. The translation of Hei 2-56247 also discloses that the support is honeycomb shaped. In addition, the support is coated with a heat resistant oxide in the form of alumina. For example, see page 3, lines 6-7.

The translation of Hei 2-56247 succeeds in teaching appellants' claimed zeolite component and heat resistant oxide component, other than zeolite, loaded with a noble metal in the form of alumina loaded with Pt. Furthermore, translation of Hei 2-56247 also succeeds in teaching appellants' honeycomb shaped support.

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Several differences are noted between the applied art of the Hei 2-56247 translation and appellants' claimed invention. The Hei 2-56247 translation is silent about the Si/Al ratio in the zeolite. Furthermore, the translation of Hei 2-56247 is silent about the specific structure of the honeycomb. In addition, the modified teachings of Hei 2-56247 absorbent structure not being poisoned by the water in the exhaust. The reference is silent about the BET specific surface area of the zeolite.

The reference of Inoue et al.(5,223,236) teaches the use of a high silica zeolite with a silica/alumina ratio greater than 20 for exhaust gas conversion. See column 1, lines 53-56 and column 2, lines 7-10.

The reference of Swaroop et al.(5,447,694) is cited to illustrates that zeolites with specific BET surface areas within applicants' claimed range are suitable for use in exhaust gas treatment. See abstract, column 5, lines 20-30 and Fig 1.

Since the translation of Hei 2-56247 does not limit the silica/alumina ratio of the zeolite, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select any silica/alumina ratio greater than 20 (e.g. a ratio of 40) because the reference of Inoue et al.(5,223,236) teaches that any silica/alumina ratio greater than 20 is desirable for exhaust gas treatment. Applicants have not shown anything unexpected with respect to the claimed silica/alumina ratio.

Furthermore, applicants' limitations directed at the specific shape of the honeycomb composition are not considered to be patentable distinctions because such shapes are conventional in the art.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made that the catalyst produced by the modified teachings of Hei 2-56247 would possess similar resistance to water poisoning because it contains similar components to applicants' claimed composition. Similar compositions are considered to have similar physical properties.

In addition, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ any proportion of components in the modified composition of Hei 2-56247, including the specific proportions of (a) and (b) claimed by applicants, because there is no invention where the difference in proportions is not critical and was ascertained by routine experimentation since the determination of workable ranges is not considered to be inventive. In re Swain and Adams, 70 USPQ 412 (CCPA 1946).

Since the modified teachings of the translation of Hei 2-56247 do not limit the surface area of the zeolite, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a zeolite with a BET in the range disclosed by Swaroop et al.(5,447,694), because the reference of Swaroop et al.(5,447,694) illustrates that such BET surface areas are effective for exhaust gas treatment.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground



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provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 3, 5, 6, 12 and 14 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 2 of U.S. Patent No. 5,164,350 in view of Swaroop et al.(5,447,694) . The claims of Patent No. 5,164,350 encompass embodiments containing like components to those claimed by applicants.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of U.S. Patent No. 5,164,350 are silent about a honeycomb shape and do not define the amount of alkali in the composition. In addition, the claims of U.S. Patent No. 5,164,350 are silent about a BET surface area.

The reference of Swaroop et al.(5,447,694) is cited to illustrate that zeolites with specific BET surface areas within applicants' claimed range are suitable for use in exhaust gas treatment. See abstract, column 5, lines 20-30 and Fig 1.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to select a honeycomb shape for the composition defined in the claims of U.S. Patent No. 5,164,350 because such shapes are conventional in the art.

In addition, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select any amount of alkali that would accomplish an effective exhaust gas conversion, including the specific amounts defined in the present claims, because it has been held that there is no invention where the difference in proportions is not critical and was

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ascertained by routing experimentation since the determination of workable ranges is not considered to be inventive. In re Swain and Adams, 70 USPQ 412 (CCPA 1946).

Since claims of U.S. Patent No. 5,164,350 do not limit the surface area of the zeolite, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a zeolite with a BET in the range disclosed by Swaroop et al.(5,447,694), because the reference of Swaroop et al.(5,447,694) illustrates that such BET surface areas are effective for exhaust gas treatment.

#### ***Response to Arguments***

Applicants' arguments filed 4/2/03 in paper no.66 have been fully considered but they are not persuasive.

Applicants' 1.132 declaration submitted April 2, 2003 in paper no.65 is not sufficient for showing unexpected results for applicants' claimed Si/Al molar ratio or alkali metal content. The table in applicants' declaration shows results for select points within applicants' molar, alkali, and specific surface area ranges. The select points within applicants' range do not illustrate unexpected results for the specific endpoints of applicants' claimed ranges. In addition, the results in the table only illustrate the effects of heat on the surface area. Such results do not provide any unexpected results supporting the selection of applicants' specifically claimed surface area.

The double patenting rejection above has been modified to address applicants' amendments in paper no.66.

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Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nadine Norton whose telephone number is 703-305-2667. The examiner can normally be reached on Monday through Thursday from 8:30 am to 7:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola be reached on 703-308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0661.

N.N.

July 25, 2003

NADINE G. NORTON  
PRIMARY EXAMINER

